WHAT IS CLAIMED IS:

1.   A method for determining device proximity in a wireless network, comprising:

characterizing at a first device any detected wireless network radio signals;

receiving any broadcast network characteristics from at least one other device on the network;

comparing the first device network characteristics with the received network characteristics from the at least one other device on the network;

if the network characteristics are within a predetermined relationship, the first device and the at least one other device are in proximity with one another.

2.   The method of claim 1, wherein characterizing comprises:

for each wireless access point emitting a detectable wireless network radio signal, measuring signal strength and noise level; and

detecting the wireless access point's MAC address, if any.

3.   The method of claim 1, further comprising broadcasting the first device network characteristics on the wireless network.

4.   The method of claim 2, further comprising storing the measured signal strength, measured noise level and the MAC address.

5.   The method of claim 1, further comprising if the location of the at least one other device is known, determining the first device's relative position from the at least one other device.

6.   The method of claim 1, wherein the comparing step comprises:

measuring the distance in radio space of the respective network characteristics.

7. The method of claim 6, wherein distance in radio space is determined by measuring the sum of the gap in signal strength and noise level for each channel.

8. The method of claim 6, wherein the distance in radio space is determined by measuring the sum of the gap in signal strength (SS) and noise level (NL) for each channel over a running window of time according to the relationship:

$$D_{Manhattan} = \sum_{ch} \left| SS_{ch} - SS'_{ch} \right| + \sum_{ch} \left| NL_{ch} - NL'_{ch} \right|.$$

9. The method of claim 1, wherein the characterizing step comprises computing the radio characteristic as a set of records, one per channel, each record indicating the channel MAC address and the observed signal strength (SS) and noise level (NL).

10. The method of claim 9, further comprising storing the radio characteristics in a time-stamped journal.

11. The method of claim 8, further comprising:

determining a degree of proximity of the first device and the at least one other device by comparing the distance in radio space with a predetermined threshold.

12. The method of claim 1, wherein network characteristics are broadcast using a protocol comprising:

periodically broadcasting a UDP packet comprising the broadcasting device's identity and the measured network characteristics.

13. The method of claim 12, wherein a UDP packet is broadcast once during a period comprising a predetermined number of seconds.

14.   The method of claim 13, further comprising synchronizing with any received UDP packets containing broadcast network characteristics.

15.   A method for indexing situations and actions associated with a device in a wireless network, comprising:

characterizing at a first location any detected wireless network radio signals;

associating an action or situation of the device with the network characteristics at the first location;

storing the network characteristics in an index of network characteristics;

comparing the network characteristics at the first location with any network characteristics stored in the index;

if the network characteristics at the first location are within a predetermined relationship to any network characteristics in the index, identifying any actions or situations associated with the network characteristics in the index.

16.   The method of claim 15, wherein characterizing comprises:

for each wireless access point emitting a detectable wireless network radio signal, measuring signal strength and noise level; and

detecting the wireless access point's MAC address, if any.

17.   The method of claim 16, further comprising storing the measured signal strength, measured noise level and the MAC address in the index.